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of a heavy wood, *cumarú;* it is two fingers thick and as much as 80 cm. long (fig. 4, *a*), and with it they crush and mill the material in a long semicylindrical trough (tau/ta'), sometimes open at both ends. In this hod they often work with a short wooden pestle; I saw one which ended at the top in a sculptured human head.

The cook shed is also the place where they make dry manioc flour, *farinha de mandioca*, which is probably the Tukuna product most desired by the Neobrazilians today. Formerly, the Tukuna did not know how to use it, but for dry flour substituted *beijú*, a thin flat cake of fermented manioc dough baked on a clay slab. They also had a flour made of maize cracked by the heat of fire," which went by the name of a/tẽ'ẽ and was eaten with bananas.

The Neobrazilians probably taught the Tukuna how to make manioc dry flour, since so many of the Tukuna terms relating to it are Neobrazilian, for instance, the name of the product, ʊ:'i (l.g., *uí*), and of the utensils used in its manufacture: e.g., yapu'na, oven (l.g., *yapúna*), te'piti, press (l.g., *tipity*), kuču, hod for the dough (P., *cocho*).

I do not know what shape the earlier grater had; today it is invariably made of a punctured sheet of metal. There are still small graters which are made from the aerial root of the *paxiubinha*, and others made from the bony part of the tongue of the pirarucú, but they are no good for grating manioc roots; they are useful only in the preparation of certain medicines.

Like any other load, the manioc roots are brought from the garden patch in large conical baskets (pl. 4). These are made by the men—who, however, never use them—in an open-mesh technique, usually of split *cipó*, more rarely of uarumã stems. The Tukuna say that they learned to make this type of basket (vo'tura; Tupi, *waturá*) from the Omágua, who then made war against the Tukuna for copying an Omágua article. Formerly the Tukuna baskets were cylindrical, with a square bottom. All are carried with a tumpline of envira. Baskets of both types are in use today, although the first type predominates.

Aside from these carrying baskets, the Tukuna also have a large woven bag, ñẽ'/rį, closed by a drawstring passed through the mesh row of the opening; it often has a tumpline woven of the same material (pl. 7, *e*). This bag, *puçá*, with the mouth held open by a hoop of cipó or of elastic wood, also serves as a dip net. It is mentioned in the legend of the origin of culture heroes as one of two articles typically used by women and is one of the elements which the Tukuna share with the cultures of eastern Brazil and the Chaco.

Formerly, the Tukuna peeled manioc roots with the edge of a large bivalve shell, koru, common along the Solimões. This is used even today to scrape pineapples for the preparation of a cooling drink.

For soaking bundles of manioc roots in plain water the Tukuna invariably use an old canoe near the entrance to the house. The squeezed pulp from the press (tipity) is placed in a hod, open at both ends and set slightly inclined on two sawhorses. Nowadays, the Tukuna make "dry" farinha just as much as "wet"; they rarely bother with tapioca. The pulp is strained through square, large-meshed sieves made of strips of bamboo, *taboca*, or uarumã (ʊ:'i-čim|/|ⁿn).

For other purposes there is a small fine-meshed sieve, va'ira-čin|/|ⁿã (*vaíra*,

[1] The word for popcorn, *pipocas*, was not used here.—Trans.

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412 sumi). These sieves are identical with those of the Neobrazilians and are probably borrowed from them. The original type of Tukuna sieve is perhaps the round one found occasionally even today; it fits better in the mouths of the jars used in straining the pulp from which beverages are made, the original purpose of these sieves.

The paddle for stirring manioc flour in the oven is the same as that used by the [171] Neobrazilians—a small board attached to a long stick, if it is not just some old canoe paddle. For turning cassava (*mandioca*) cakes in the oven the Tukuna use a small board shaped like a segment of a circle, almost invariably a broken section [285] of an old canoe-paddle blade. Flour is kept in cylindrical openwork baskets woven [251] of uarumã in an open-mesh technique, lined with leaves that also seal the top, and tied by a plait of eipó. This is the common form also used by the Neobrazilians.

In the kitchen there are always a number of small four-legged benches, ʔú/ma'vɨ̃ 352 (fig. 4, *b*), rectangular or oval in shape, each carved entirely from a single piece of wood. Sometimes they are made in the form of a tortoise, *jabotí* (*Emys tabulat* (pl. 9, *c*), and they are always made with some cunning. They are never more than [362] ten centimeters high. These benches are used exclusively by men while partaking of refreshments, whereas the women sit on the floor.

Cleanliness.—The house as well as the kitchen is usually clean, since both are 356 swept out at least once daily with a broom made of the leaf ribs of small *tucumã* leaves left over from the fibers used in making thread. The Tukuna do not tolerate a stink in the house or in the kitchen. They immediately remove excreta of domestic [412] animals or of small children, including the soiled portion of the earth, with the point of a short, broad blade.[n] This scrupulousness is the main reason why these [231] Indians have a distaste for raising chickens and never keep pigs.

Neither dog fleas nor chiggers (*Pulex penetrans; bicho de pé*) become annoying [136] in Tukuna houses, but cockroaches, crickets, and tracuá ants are most disagreeable. These last, above all, immediately swarm over any food not on the grill while the fire is burning and invade baskets and trunks with irritating persisteney. The Indian chief Calixto daueru'kɨ fought this plague in Igarapézinho by thrusting thick reeds, open at one end, into the house thatch. In a short time the insects would build their nests in these reeds and, when the reeds were filled, he would shake them out over the fire and again insert the reeds in the thatch.

Communication between Settlements

487 Formerly, communication between isolated settlements was mainly by land, since the Tukuna, in contrast to the Omágua, were foot Indians, not canoe men. All the igarapés (tributaries of the left bank of the Solimões) inhabited by these Indians were connected by trails; likewise the different houses along a particular igarapé. Castelnau mentions these paths,[o] which connected the Tukuna habitations of the interior from Caldeirão (Belém) to Tabatinga and Loreto. With the development of navigation many of these trails were abandoned, although some are used even today.

501 Originally, the Tukuna practiced little navigation, being isolated in their jungle 177 centers on solid ground by the Omágua, their superiors in warfare. They had only

[n] *Terçado*, lit., a short, broad sword; probably the machete or *facão*.—Trans.
[o] Castelnau, p. 50.

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For the deer that invade the plantations, pitfalls (a:'maʲ°) are dug to the depth of a meter and a half, a sharpened paxiuba stake being set vertically at the bottom. In a pitfall that I saw, a dog had died, and a few days later an alligator also fell into it.

Gathering

The gathering of wild fruits and the capture of animals that cannot properly be included under hunting are still carried on by both sexes; by men when the opportunity presents itself and by women on trips made for the purpose.

There are many varieties of edible wild fruits, although most have no economic importance, being no more than mere tidbits, like the pods of the *arara tucupy*, the seeds of which are covered with a thin layer of thick, sweet liquid. The only fruits of real economic importance are those of the four palms, burity (*Mauritia vinifera*), *bacabeira* (*Oenocarpus bacaba*), *patauá* (*Oenocarpus patauá*), and açahy (*Euterpe* sp.). All four species are common in the jungles of the Tukuna. During the period of gathering one always sees large earthenware vessels containing burity fruits soaked in a solution to make the rinds come off more easily, and the Indians constantly help themselves. The fruits of these four palms are then macerated in tepid water and a fatty drink is prepared by a process common among the Neobrazilians as well, the separation of the pulp from the stones by treading. The liquid is passed through a very fine sieve (va'iri-činʲ-ĵ°ń, from va'ira, açahy). A sufficient quantity is then prepared so that the neighbors may be invited to drink also. The gathering of the fruits and the preparation of the beverage are feminine tasks.

The Tukuna are acquainted with the Brazil nut, or niggertoe, *castanha do Pará* (*Bertholletia excelsa*), but they eat only the kernels without preparing from them either milk or oil. Nino, an Indian of Igarapé da Rita, had planted near his house about ten such saplings, which were then bearing fruit.

The Tukuna will not eat toads, though they do not reject various species of frogs; they also eat beetle larvae, which are found in burity palms, and the queens of *saúva* ants (i.g., *içú; Atta cephalotes*) when they are swarming. Of the various kinds of honey the most appreciated is that of the wild bee, jandaíra. Bees are not raised at home.

Food

The most common food is fish, either boiled or freshly smoked and eaten with farinha (formerly with beijús). Seasoning is obtained by thrusting the fingertip into a small dish with crushed salt and pepper and then licking it. At present, the salt is bought from the Neobrazilians, but it is said that in the old days it was prepared from the ash from burned green marajá palm leaves.

Of fish, the Indian takes only as much as he can swallow at one gulp, picking it, with a rapid pinch of the fingers, from the common receptacle. In consequence, the piece of fish shortly assumes such a tattered appearance that it looks like nothing more than a dog's dinner.

When there is roast game, no one cuts himself a large piece, but each in turn seizes the meat, tears off a chunk with the teeth, and tosses the remainder back

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304 *Piercing of the septum.*—The Tukuna have largely abandoned the practice of piercing the septum, which accompanied perforation of the ear lobes. When they [301] pierced it, they wore in the hole a wand of reed or canna brava called vẽ-ëra'ñ (from vẽ, introduce; rañ, nose).

Tooth filing.—The Tukuna custom, which today has become quite common [177] filing to points the upper incisors and, more rarely, the lower as well appear have been acquired by contact with the Neobrazilians. Yet the mother of one of my informants condemned the practice as improper and ugly and said that this operation was designed to prevent caries, which forms easily between the teeth—an explanation which is perhaps a secondary rationalization.

Tattooing.—The question of primitive tattooing among the Tukuna is difficult to settle satisfactorily; some writers probably took for tattooing what was actually only painting with the juice of the genipa (*Genipa americana*), which is still [386] widely used today.

304 Padre Monteiro Noronha, the first author to devote a small chapter to the tribe, says that they "have the same strokes [as their neighbors the Caca-tapiiya: 531 a wide black stroke, curled at the tip, which begins next to the nose and ends at 114 the sides of both ears] but narrower and shorter." Martius mentions "eine oder zwei schmale, quer über das Gesicht laufende, tätowierte Linien. Doch findet sich dieses Merkmal keineswegs gleichmässig." Castelnau writes: "D'autres avaient sur les joues deux lignes noires transversales," without indicating whether the lines are painted or tattooed.

One of Marcoy's plates shows a male Tukuna with a double stroke or line in the shape of a loop that begins next to the ear and ends in a small cross on the cheek with an extension to the corner of the mouth. Bates writes: "Both men and women are tattooed, the pattern being sometimes a scroll on each cheek, but generally rows of short, straight lines on the face." His illustration represents the Indians with two short, parallel lines on each cheek, extending slightly to the side of the nose. Orton, who as far as the Tukuna are concerned seems to have copied Bates, describes them as "tattooed in numbers of short, straight lines on the face." Lastly, the Tukuna of Barbosa Rodrigues has on each cheek a curved line (the curvature pointing downward) from the nose to the ear, and another almost parallel line that begins at the corner of the mouth. There is no indication whether these are painted or tattooed.

304 Today there is not a single Tukuna with tattoo on the face, the bit that appears [177] on their arms being an imitation of Neobrazilians.

According to Nino, my best Tukuna informant, tattooing came to the tribe from 304 the ĕu'mana (Yumána) Indians. These people, however, used an oval network ● 177 pattern surrounding the mouth, with ramifications of the design extending to the 531 ears. Nino told me that the members of the macaw clans, ĕara' and vɔɔ', used formerly to tattoo the cheeks in imitation of the markings of macaws. The lines of the design were first drawn in by burnt *cicantã* resin and were then punctured by a needle.

304 Another informant told me that "those who were learned" had the figure of a 531 crayfish, *caranguejo*, and a scorpion tattooed on the forearm or on the back of the hand, and that the dye was the juice of a plant called bu'rë (see p. 42).

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304 114 *Circumcision.*—Another practice which today cannot be properly explained is circumcision. In my opinion, all the references to this custom are based on the account of Ribeiro de Sampaio, who saw the Tukuna briefly in 1774 and repeats a résumé of data obtained by Padre Monteiro Noronha in 1768.

Monteiro Noronha says:

> A few days after birth children of both sexes are circumcised by their mothers, who are charged with this operation. The males have the tip of the prepuce and the lower ligature which secures the glans cut; the females the exterior excrescence [clitoris?]; [but] for a clearer description of this practice the interest of curiosity must bow to the prejudice of modesty.

The report is explicit, at least as regards the male sex, but if it is as inaccurate as some of the accounts of this same author on animism and idolatry, it is of little value.

304 [171] Nowadays, at least, there is not the slightest remembrance of male circumcision, and, although the Brazilian Tukuna recall the corresponding operation as being formerly performed on girls, they themselves assert only that this custom once existed—and perhaps even still exists—among their Peruvian congeners. The reference is probably to an excision of the *labia minora*, made for reasons of hygiene, as they indicated to me, shortly after the child is born. My informants said they would regard the appearance of a woman so circumcised as disgusting.

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202 As a signal of alarm they strike blows with the *olho do terçado*, "eye of the machete,"[a] on the keel or sides of an overturned canoe, or against a leaning plank.

534 The rattle stick is a substitute for the gourd rattle, *maracá*, which is completely unknown among the Tukuna. It is a crude stick, retaining its bark, about 1 m. or more in length and from 2 to 3 cm. thick. The rattles are tied to the lower third. It is not used in the "military marcb" mentioned above, but it is never absent from any other ceremony. The beat is often at variance with the measure of the drum, owing to its generally much slower tempo.

The rattles are almost always made of the hulls of one of two species of vegetable: the fruit of the **auaí** (*Thevetia nerifolia;* l.g., auaí, T., a:'ru), the other and smaller one called in Tukuna kə''taru (l.g., *auahy do igapó*). The hulls are suspended from a narrow web plaited from tucum fiber. The masked dancers also carry these hulls attached to the ends of their staves and spears, and even tied below the knee.

An instrument of masculine use, which I do not know whether to consider a variation of the rattle stick or a "stamping tube," is the ba:'/ma, an enormous, thick reed (l.g., tazuaruçú; *Guadua superba* Hub.) about 2½ m. or more long (pl 14, *g*). The upper end, in the shape of a caiman's mouth, is open to a depth of 20 [532] to 30 cm. This mouth is toothed in the masculine and smooth in the feminine specimens. Below the mouth is the small face of a demon, similar to those of the masks, and below this are tied rattles. The rest of the piece is decorated with a few bels [237] of urucú on which are glued hawk feathers.

533 The ba:'/ma are always used in pairs, male and female. Two players dance, one in front of the other, each holding his ba:'/ma in both hands and beating the ground with the lower end, the two instruments being crossed. Since the internal nodes are not removed, the sound is negligible. Like the turtleshell drum, the ba:'/ma is used exclusively by certain clans; it also figures in the legend of the culture heroes.

534 Used in conjunction with the ba:'/ma, there are also the kə''iri, horns of thick bamboo some 70 cm. or more in length and 6 cm. in diameter. One end of the instrument is sealed by a node; the other is open and cut into the shape of a caiman's [532] mouth, exactly like that of the ba:'/ma. Like the latter, the kə''iri are decorated with urucú and hawk plumage. About 15 cm. from the closed end there is a rectangular opening through which one blows into the instrument to produce its singular note. It is used only on special occasions—by both sexes and always by three couples. Like the ba:'/ma, the kə''iri are male and female.

Aside from these instruments of ceremonial use there are few musical instruments; such as there are are somewhat suspect as aboriginal instruments or are clearly post-Columbian. Without doubt the flute (vəvë'ru), made from royal-hawk [237] bone (*Harpya destructor*, L.) is aboriginal, since the hawk occurs in a legend of the culture heroes (see p. 125). It is blown into from one end and has five holes for the fingers—four grouped together on the anterior side and one opposite them on the lower surface. Another flute, cited by Tessmann, is made of bamboo, with two holes close to the lower end; a specimen of this type is in the Berlin Museum. [171] A third flute, with more holes, is just like that used by the Neobrazilian population of the region, but I do not know which was borrowed from whom.

[a] This refers to the iron ring helving the blade to the grip.—Trans.

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881 534 Before describing the performances, however, some explanation is necessary of the two elements that play such an important role in them—the ceremonial musical instruments and the masks.

The musical instruments.—We have already seen that the term "uaricána" serves to designate two quite different instruments, which share only their enormous length, their taboo character for women and children, and their almost wholly ceremonial use. One, the bu'/bu, is a conical horn made of a section of bark, rolled into a spiral; the other, the tə'/kị, is a wooden megaphone. Instruments of [171] the bu'/bu type are very common in the Amazon basin and in the region adjacent to the Guianas. The tə'/kị, in my opinion, has never been met with except among the Tukuna, for whom it is of the greatest importance, being the voice of a demon; whereas the bu'/bu is merely an accessory instrument.

881 532 534 The tə'/kị was formerly invariably accompanied by two statues of muirapiranga wood (T., pu'kịrẽ). Of those that I saw on the Rio Jacurapá, one was a little under, the other a little over, a meter in length and crudely made, but I was informed that in the old days they were the height of a normal man. Into these entered the shades of demons, who sang through the tə'/kị, with no one approaching it; there were no men players. In those times the instrument was painted with clay of various colors; neither it nor the statues were kept in water, but they were housed in a small, closed compartment within the dwelling. I did not succeed in learning the names of the personages represented by these statues. One person told me that the masculine statue was entered by the spirit of an ancient shaman of the Omágua, who had been slain by the Tukuna.

881 534 During the festivities, the tə'/kị and bu'/bu—there are always two or more of the latter—are brought to the enclosure each day after nightfall and are removed before dawn. The host selects an old man versed in the ritual to take care of these instruments, and also chooses other persons from among the guests, *ad hoc*, to transport and play them (tə'/kị-ñarị-përu'/ṅ, player).[m] No society, nor even an individual (aside from the host), is permanently in charge of the uaricánas.

Each instrument is carried in a horizontal position on the shoulders of two persons, while behind them a third plays it once or twice during the procession. In front of the ceremonial instruments march two or three piston-flute (ñë'kutị) players (see p. 43), and a few beaters (kvaidu"/ị") armed with clubs, with which they run round the feast house and beat on the thatched covering, to frighten the women and children. The instruments are placed in the enclosure on forked sticks or sawhorses, with the mouthpiece at a convenient height and the bell turned toward the wall behind which the girl stays in seclusion. With some intermission, the bu'/bu and tə'/kị are blown all night. In the enclosure there is always a pot with drink for the players and also for the instruments themselves, for a gourdful is poured into their mouths as a libation.

881 534 773 The tə'/kị and bu'/bu were invented by the culture hero dyəi'. Each tə'/kị bears a name given it by its owner: that of dyəi' is called e:ta-vẽ ("Of the Star"). Other tə'/kị names are ëëa ("King Vulture," urubú rei), i'rava (urubú gereba), maiⁿa' ("Otter"), and so forth. First, dyəi' painted his instrument with *carajurú* (*Arrabidea chica*, Bur.), but an immortal counseled him to paint it with clay of

[m] The *p* in përu'/ṅ is pronounced with incomplete closure of the lips, almost like *f*.

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Such are the legends. The idea of heaven as an upper world similar to the earth and with inhabitants like those of the world below is encountered in the legends of the culture-hero brothers relating to the theft of fire (see p. 130) and the origin of languages. These tell how in the old days there was free passage between the two worlds, how this was interrupted, and how thereafter an attempt was made to reëstablish it. All these motives are so common in American mythology that they do not merit further comment.

ta-ë′ *and the souls.*—Quite different, however, is the concept of the most important personage of the upper world, ta-ë′. I do not know of any similar figure in the religion of other tribes. Nothing is known of her origin. She is apparently as ancient as the heaven in which she lives, and is immortal but definitely not omnipotent, nor omniscient, nor infallible. Overburdened with tasks, she may involuntarily cause damage to men through her mistakes. Nothing material in the world was created by her, nor does she govern anything; therefore she is neither the "Common Mother" nor the "Primary Mother" in Baldus' terminology.

Prayers are not directed to her, nor does she receive sacrifices. She has nothing to do directly with the culture-hero brothers, who equal her in importance, or with the spirits of the trees or the demons (ńɔɔ′) of the lower world. No shaman is in communication with her. Nevertheless, for the Tukuna she is a figure of great importance and respect, because of her inseparable connection with the notion of sin and subsequent punishment, in life or after death, since she is the mistress of that part of the human soul called "naa′ë." With the other part of the soul, called "načii′" (shade of the deceased), she has nothing to do.

ta-ë′ does not represent a divine justice that tots up the sins and good deeds of the soul. She takes into consideration only three categories of crime: incest, infanticide (including voluntary abortion), and murder through witchcraft. She does not bother with such trifles as theft or a hot-blooded killing. Incest (vɔ:′mači) is a transgression of the law of exogamy which she established when she taught the first men to which clan each belonged, making them taste the jacuruxy broth (see pp. 58 and 130); this was the only time, however, that she intervened in the work of the culture heroes. Incest is the only crime for which ta-ë′ eventually punishes the sinner, by madness while he is still living.

I have already discussed the fate of an infanticide's soul (p. 69). When the soul of a sorcerer appears before ta-ë′, she treats it in the same fashion as she does that of an infanticide; in fact, the three sins mentioned above are considered almost equal. The gravity of a crime depends upon whether the sin was committed thoughtlessly and with some extenuating circumstances, and whether it is repeated.

If there are extenuating circumstances, the sinner is purified by one of the čɔrë′ruma, which licks him from toe to crown. However, even if the naa′ë of a perverse and stubborn sinner slips past the tɔ/rí′ta gate, it is torn to shreds by the čɔrë′ruma or rejected by ta-ë′, who orders lightning to cast it down on the earth again, or even sends it below to the underworld (na:′pị), where it is transformed into a tiny frog (nu:′gu), with whose death it vanishes.

It is noteworthy that the Tukuna regard as crimes these three sins which not only harm the individual but are also ruinous for humanity as a whole: "Thou

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539 The jaguar permitted them to place the chain round her neck, and so she was a prisoner. "Let's see your teeth!" said dyoi', and struck her on the nose with a stone; the jaguar fell senseless, but she clenched her jaws. With difficulty dyoi' managed to pry them open at last with a billet of sonpé wood. And there in the jaguar's gullet appeared the tip of ãũ'/tapa's stomach. e'pi tried to get it out with the end of a pole, but proceeded with such ineptitude as to make it rebound, flying far away in a great curve. It fell into the water, where a gigantic caiman swallowed it. The brothers killed the jaguar, breaking all her bones. Then they tried to reach the caiman, throwing ants' nests into the water until a dry surface was formed, with the exception of a pool wherein the creature lay. They made a loop of the chain and, hanging it from the tip of a pole, passed it over the caiman's head. They throttled him, bringing him ashore; but his jaws had locked, and it cost them a tremendous amount of labor to open them. When finally they had succeeded, the bumbling e'pi again exerted such force that ãũ'/tapa's stomach sprang suddenly from the caiman's gullet to some distance away, and was gulped down by a forest lizard, taá. In vain the two brothers strove to open grandmother's mouth; she stubbornly refused to give up the prize.

dyoi' was obliged to hunt for a live coal and apply it to the lizard's throat, and this is why it has a red mark to this day in the corresponding place. ãũ'/tapa's stomach appeared in "granny's" mouth, but again e'pi made it spring out suddenly with the tip of his pole, the stomach coming to rest between the wings of a big, blue butterfly [*Morpho menelaus*]. The butterfly closed its wings and would not give up the stomach for any price. They had to burn a hole in its wings. This time dyoi' did not permit e'pi to meddle. He himself took out the stomach and, with it and the flesh and bones found in the jaguar's belly, recomposed ãũ'/tapa's body. He stamped his foot on the ground, whereupon ãũ'/tapa sprang up, saying: "My son, you have frightened me!"

[115] *Version collected in 1929.*—The two preceding episodes were told to me in quite a different way by "Captain" Felix of Igarapé de Belém in 1929."

ngutapa became angry with his wife; he tied her with her legs spread so that her privates were exposed to hornet stings. The caneas freed the woman, who made the hornets attack ngutapa. The hornet stings caused an enormous swelling in ngutapa's right knee, from which finally came two boys, dyoi' and ipi, and two girls, ai'ke and muwaéa. ngutapa, in the form of a deer, was eaten by a jaguar in the jungle, but dyoi' and ipi resolved to avenge him. They made cannibal fish (piranhas) and put them in the igarapé, where the jaguar was accustomed to cross over on top of a log bridge. This they made slippery by daubing it with ambaúva juice so that the jaguar slipped and fell into the water, where she was killed by the voracious fish. They placed her cadaver on shore, taking from her belly the remains of ngutapa, which dyoi' put together again and reanimated with a kick. ngutapa got up and asked how long he had been sleeping.

This version is quite condensed, and on one or another point perhaps I may not have understood the narrator well, but the way in which he told of the jaguar's [171] death is noteworthy because of the parallels in other mythologies.

The Acquisition of Daylight

In early times a permanent darkness reigned on earth. A sumahuma tree covered the entire sky with its foliage, permitting no light to pass through. The nocturnal monkey used to pass by every day. He had eaten sanene-cane fruits [Lg., arara tucupy] and, because of this, each time he let fall his excrements one would see a glow. dyoi' observed him and, following him secretly, found the fruit tree. He gathered a quantity of hulls from the ground and invented the hurling-fork.[a] With it he threw hull after hull against the leafy cover. The projectiles pierced it, and through each hole a small light appeared. Thus the stars were formed.

[a] Nimuendajú, Tukuna-Indianern, p. 180.

[111] [b] T., kv[raruʔ/, a stick split at one end with a cord tied below the split. The cord is rolled round a seed, placed in the cleft, and cast with a forceful snap of the forearm. Speiser observed similar instruments among the Aparaí, Rydén among the Toba, and I among the Guaraní.

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ORIGINAL ARTICLES.

America, South: Technology. **With Plate L.** **Rydén.**

Notes on a Knitting Technique from the Tukuna Indians, Brazil. *By Stig Rydén, Gothenburg (Göteborg) Museum, Sweden.*

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286 In a collection from the Tukuna (Ticuna) Indians, acquired by the German-born Brazilian explorer Curt Nimuendajú in 1929 on Rio Solimões for the Gothenburg Museum, are, *inter alia*, preserved two carrying-nets (Figs. 1 and 3) (Nimuendajú, Curt: *Besuch bei den Tukuna-Indianern*, Ethnologischer Anzeiger Bd. II: 4, Stuttgart, 1930, sid. 188). In one of these nets (Fig. 1) the mouth is kept open with a narrow wooden branch bent into a circular hoop, while in the other (Fig. 2) no such arrangement is found, but a cord for carrying is provided instead. Both nets are manufactured of vegetable fibre, and the knitting technique employed is seen in detail in Fig. 2. The Tukuna collection also includes a partly finished carrying-net (Fig. 4). From this unfinished piece of work it is evident that the loops were formed by means of a bone needle on a thin sliver of uniform thickness, probably cut out from the skin of the petiole of a palm leaf. The sliver is allowed to remain in the net until the knitting is completed, whereupon it is broken up and removed. The presence of this uniformly thick sliver ensures that the loops of the net are all turned out even-sized. In this case the sliver performs a function corresponding to that of a mesh gauge, and the retention of the sliver in the meshes while knitting is going on tends to make the net more easily handled as the work continues. The method of forming the loops on the sliver will be apparent from Fig. 5.

286 227 171 Koch-Grünberg (*Zwei Jahre unter den Indianern*, Berlin, 1909–10, Part II, Figs. 12, 13, p. 39) depicts a number of fishing implements from Rio Aiáry, in Brazil, where the same knitting technique has been employed as in the carrying-nets of the Tukuna. These fishing implements are designed for catching small fish and crabs, and consist of a more or less circular net kept open by means of a bent twig. These smaller-sized fishing nets are, in contradistinction from the larger variety, among the Rio Aiáry Indians always woven in the technique just referred to. As to the method employed in the weaving of these nets nothing is mentioned by Koch-Grünberg. It may, however, be supposed that they were manufactured by the same method as were the carrying-nets of the Tukuna tribe. For it may be noted that Koch-Grünberg in the same connection illustrates a "network basket" for crab-fishing, and in this basket the sliver is still left in the finished article, that is to say, the knitting technique is identical with that of the Tukuna net prior to the breaking up of the sliver.

171 Already in the earliest treatise known to me on South American knitting technique, a brief essay published by P. Radin in 1906 (*Zeitschrift für Ethnologie*, Band 38, Berlin, 1906, p. 938), the author's attention is turned to the technique here dealt with. At that time very little authentic material was available, and scantier still were data as to methods of manufacture. Thus he supposes that in the knitting two slivers were used, one that was pushed in for the purpose of securing in their places the loops already formed, and another for determining the size of the loops.

171 285 It is not impossible that the knitting technique here described constitutes a development of a certain basket-weaving method, viz., the so-called coiled basketry technique. Especially striking is the similarity between this knitting technique and the variant of coiled technique that occurs in

3: Ryden E-4 (no date) 1935 SQ20 Tucuna SQ20
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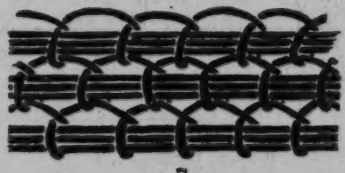

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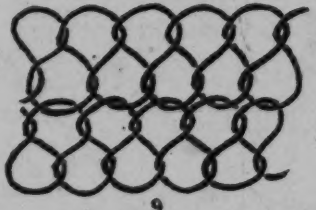

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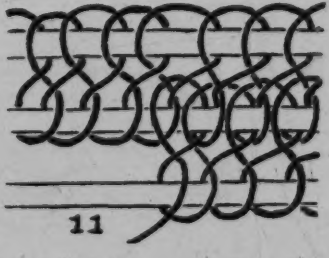

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Tierra del Fuego. A basket from the Ona tribe executed in this technique is depicted in Fig. 6, of which a detail is shown in Fig. 7. This particular basket is probably made of some kind of grass. This basketry technique is, however, so far as I know, absent in the Amazonas region, while on the other hand there exists to this day among the Apinayé and Canellas Indians of eastern Brazil the variant of the coiled technique in which the ultimate spiral is fastened to the last but one by pulling the connecting string *through* the next foregoing instead of—as in Fig. 7—*making a loop* round the whole of it. (*Cf.* Mason, Otis T., *Directions for collectors of American basketry*, Smithsonian Institution. Part P of *Bulletin of the United States National Museum*, No. 39, Washington, 1902, Fig. 31). This technique occurs besides also in other localities in the Amazonas region. Coiled technique is nowadays almost entirely discarded by the two Brazilian tribes just referred to, but was formerly no doubt considerably more widely distributed in South America. In that continent it seems to be steadily dying out.

In another work of Mason (*Aboriginal American Basketry*, Annual Report of the Board of the Smithsonian Institution, Report of the U.S. National Museum, Washington, 1904, p. 248), he has also pointed out the similarity between the knitting technique here dealt with (Fig. 2) and the coiled technique employed in basketry manufacture, and describes it as "looking "as all-coiled basketry would if the foundation were "removed." Again he says of it: "Further on "illustrations will be given showing the wide extent "of this technical process of coiled basketry without "foundation. Examples in the U.S. National Museum "come from as far south as Paraguay and even the "Straits of Magellan. It is in common use as far "north as northern Mexico. Both the possession of "different material and the demands of a tropical life "have occasioned the employment of this particular "technic in articles of common use about the "household. Its relation to coiled basketry and bead "work is shown by the fact that women in making "the fabric use a needle to carry the thread or string "around through the row of work proceeding. A "small rod or mesh gauge is used to secure uniformity "in the size of the meshes." In the last-mentioned work (Fig. 204) Mason, besides, depicts an Arawak woman with a carrying-net executed in the technique seen in Fig. 5, i.e., with the wooden sliver left in.

FIGURES 2, 5, 7, 9, 11. KNITTING TECHNIQUES: TUCUNA INDIANS, BRAZIL.

For descriptions see note on p. 163.

1 [i.e. 2 coiled. - Analyst]

3: Ryden E-4 (no date) 1935 SQ20 Tucuna SQ20
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It is not impossible, however, that the knitting technique recorded from the Tukuna Indians—in which a sliver is employed—may have originated in African regions. For it may be noted that in the West African collections, which have been added to the Gothenburg Museum by the explorer G. Bolinder, there is a woman's fishing net (Fig. 8) from the Mendi tribe of central Sierra Leone, exhibiting the technique illustrated in Fig. 9. Bolinder's collection also includes a similar net half-finished (Fig. 10) from the same tribe. This piece of work discloses that in this case, too, the loops have been formed on a uniformly thick sliver which is broken up and removed when the work process is completed, that is to say, in the manner used by the Tukuna. The actual knitting technique is, however, as will be seen, somewhat different in each case. The Mendi net is woven of fibre strings, and in the technique generally known as a 'figure-of-eight,' or double loop (Fig. 9). The method of forming this kind of loop by means of a sliver of uniform thickness will be apparent from Fig. 11. The figure-of-eight loop is not unknown in South America. It occurs, for example, frequently in knitted caraguata satchels in the Chaco, although these are always woven without the aid of a sliver or mesh gauze, and the piece of knitting under process is made more easy to handle by keeping it extended between two sticks planted perpendicularly in the ground. For the distribution of the figure-of-eight loop, *see* Erland Nordenskiöld, *An ethnographical analysis of the material culture of two Indian tribes in the Gran Chaco* (Comparative Ethnographical Studies I), Gothenburg, 1919, p. 201. The Gothenburg Museum possesses a partly finished satchel from French Congo (Bakuba), made in the same simple loop technique as the Tukuna carrying-nets. As to the actual mode of manufacture, this differs however in this case from that of the latter. The sliver is left in the last row of loops made, and is evidently pushed forward as the work proceeds. Hence it will be seen that the technique is identical, but the sliver has lost its function of constituting a support for the fabric while the work is progressing, and only acts as a gauge for effecting a uniform size in the loops or meshes.

It is not impossible that the method dealt with above (that of forming the loops on a mesh gauge left in all through the process of finishing the net) was introduced into the Amazonas region by negroes. The West Coast of Africa constituted, as we know, the principal recruiting area of the slave hunters, the eastern coast of Brazil being a not unimportant market for this trade. It is only natural that those negroes brought along with them to their new home country a considerable number of their old culture elements and manufacturing methods.

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DESCRIPTION OF THE ILLUSTRATIONS IN PLATE K AND IN THE TEXT.

Fig. 1. Carrying-net. Tukuna. Depth, 20 cm.
„ 2. Knitting technique in carrying-nets, figs. 1 and 3.
„ 3. Satchel with carrying strap. Tukuna. Depth, 35 cm.
„ 4. Satchel, half-finished. Tukuna. Width, 20 cm.
„ 5. Detail of net, fig. 4.
„ 6. Basket. Ona. Width, 12 cm.
Fig. 7. Knitting technique in basket, fig. 6.
„ 8. Woman's fishing net. Mendi. Central Sierra Leone. Depth, 80 cm., width, 45 cm.
„ 9. Detail of net, fig. 8.
„ 10. Fishing net, half finished. Mendi. Central Sierra Leone. Greatest width, 28 cm.
„ 11. Detail of net, fig. 10.

All the above objects form part of the Gothenburg Museum collections.

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4: Marcoy T-5 (ca. 1865) 1875 SQ20 Tucuna SQ20

of fermented liquor, the *Ihiéboah* fête. On this occasion dancers, with their heads muffled in bags representing human figures, execute a series of figures more or less successful as an attempt at chorographic art.

On awaking in the morning the young girl finds the floor of the hut strewn with ashes. Without this precaution on the part of those who have shorn and beaten her, *Mhohoh* (the devil), at the moment the soles of the girl's feet touched the ground, would not fail to possess himself of her through the new path provided by nature. This formality concludes the ceremony, and, after the customary ablutions, the girl, again free, awaits without impatience the time when, her hair having grown, she is handed over to a husband. As Ticuna girls are marriageable about their tenth year, and two or three years of delay are necessary that their hair may attain a certain length, it would appear that at twelve or thirteen years of age they may be brought under the yoke of Hymen, a classic phrase very applicable to their lot.

The male children, like those of the Jews, are circumcised a few days after birth. Female children are subjected about their fifth year, and under pretence of circumcision, to a species of mutilation the object of which is unknown to us, but which, if it had been practised in the Isle of Lesbos, in the time of Sappho, Erinna, Telesilla, Myrtis, and Anyta—other and better names I pass by—would have rendered impossible a certain dialogue of Lucian, and deprived Juvenal of the malignant pleasure of writing his satire, *Lesbides infamem*, &c.

At the period when the Ticunas formed a nation under the command of chiefs, instead of being, as now, merely scattered, self-dependent families, they worshipped a god-creator, under the name of *Tupana*;[1] gave thanks to, although abominating, a spirit of evil called *Mhohoh*; and believed that the soul, after the death of the individual, would pass, according to the works during life, either into the body of an intelligent being or into that of an unclean animal. According to their ideas heaven was divided into two spheres, the one superior the other inferior, separated by a transparent vault; in the first the creative spirit Tupana was intrenched; the stars which we see from below are the rays of light from his face, weakened by passing through the intermediate vault and the inferior sphere. Their astronomers admitted the revolution of the earth around the sun, and recognized in this luminary the brother and spouse of the moon. According to them the rivers were the arteries of the terraqueous globe; the streams the veins; and their respective currents were due to the gravitation or simple motion of the planet around the pivotal star or sun.

From their systems of theogony and cosmogony the Ticunas have only preserved a profound indifference for Tupana and a dreadful terror of Mhohoh, who from the rank of a spirit of evil, which he long held among them, has now descended to the vulgar condition represented by the attribute of an evil-eye. All the ardour and intelligence of these savages appears to be turned towards a free traffic in articles of toy-ware, gimcracks, and playthings of all kinds, and cotton handkerchiefs of staring colours.

[1] We may remark, in passing, that in the Yahua and Ticuna idioms, as in those of Omagua and Tupinamba, of which we give specimens farther on, the spirit of good is always termed Tupana, whilst the name of the spirit of evil is different in each idiom.

5: Bates N-5 (1848-1859) 1892
SQ20 Tucuna SQ20

which the village is built extends on one side nearly a mile into the forest, but on the other side the descent into the lowland begins close to the streets; the hill sloping abruptly towards a boggy meadow surrounded by woods, through which a narrow winding path continues the slope down to a cool shady glen, with a brook of icy-cold water flowing at the bottom. At mid-day the vertical sun penetrates into the gloomy depths of this romantic spot, lighting up the leafy banks of the rivulet and its clean sandy margins, where numbers of scarlet, green, and black tanagers and brightly-coloured butterflies sport about in the stray beams. Sparkling brooks, large and small, traverse the glorious forest in almost every direction, and one is constantly meeting, whilst rambling through the thickets, with trickling rills and bubbling springs, so well provided is the country with moisture. Some of the rivulets flow over a sandy and pebbly bed, and the banks of all are clothed with the most magnificent vegetation conceivable. I had the almost daily habit, in my solitary walks, of resting on the clean banks of these swift-flowing streams, and bathing for an hour at a time in their bracing waters; hours which now remain amongst my most pleasant memories. The broad forest roads
361 continue, as I was told, a distance of several days' journey into the interior, which is peopled by Tucúnas and other Indians, living in scattered houses and villages nearly in their primitive state, the nearest village lying about six miles from St. Paulo. The banks of all
[342] the streams are dotted with palm-thatched dwellings of Tucúnas, all half buried in the leafy wilderness, the scattered families having chosen the coolest and shadiest nooks for their abodes.

I frequently heard in the neighbourhood of these huts the "realejo"
136 or organ bird (Cyphorhinus cantans), the most remarkable songster, by far, of the Amazonian forests. When its singular notes strike the ear for the first time the impression cannot be resisted that they are produced by a human voice. Some musical boy must be gathering fruit in the thickets, and is singing a few notes to cheer himself. The tones become more fluty and plaintive; they are now those of a flageolet, and notwithstanding the utter impossibility of the thing, one is for the moment convinced that somebody is playing that instrument. No bird is to be seen, however closely the surrounding trees and bushes may be scanned, and yet the voice seems to come from the thicket close to one's ears. The ending of the song is rather disappointing. It begins with a few very slow and mellow notes, following each other like the commencement of an air; one listens expecting to hear a complete strain, but an abrupt pause occurs, and then the song breaks down, finishing with a number of clicking unmusical sounds like a piping barrel organ out of wind and tune. I never heard the bird on the Lower Amazons, and very rarely heard it even at Ega; it is the only songster which makes an impression on the natives, who sometimes rest their paddles whilst travelling in their small canoes along the shady by-streams, as if struck by the mysterious sounds.

171 The Tucúna Indians are a tribe resembling much the Shumánas,
181 Passés, Jurís, and Mauhés in their physical appearance and customs. They lead, like those tribes, a settled agricultural life, each horde obeying

5: Bates N-5 (1848-1859) 1892
SQ20 Tucuna SQ20

a chief of more or less influence, according to his energy and ambition, and possessing its pajé or medicine man, who fosters its superstitions; but they are much more idle and debauched than other Indians belonging to the superior tribes. They are not so warlike and loyal as the Mundurucús, although resembling them in many respects, nor have they the slender figures, dignified mien, and gentle disposition of the Passés; there are, however, no trenchant points of difference to distinguish them from these highest of all the tribes. Both men and women are tattooed, the pattern being sometimes a scroll on each cheek, but generally rows of short straight lines on the face. Most of the older people wear bracelets, anklets, and garters of tapir-hide or tough bark; in their homes they wear no other dress except on festival days, when they ornament themselves with feathers or masked cloaks made of the inner bark of a tree. They were very shy when I made my first visits to their habitations in the forest, all scampering off to the thicket when I approached, but on subsequent days they became more familiar, and I found them a harmless, good-natured people.

A great part of the horde living at the first Maloca or village dwell in a common habitation, a large oblong hut built and arranged inside with such a disregard of all symmetry, that it appeared as though constructed by a number of hands, each working independently, stretching a rafter or fitting in a piece of thatch, without reference to what his fellow-labourers were doing. The walls as well as the roof are covered with thatch of palm-leaves; each piece consisting of leaflets plaited and attached in a row to a lath many feet in length. Strong upright posts support the roof, hammocks being slung between them, leaving a free space for passage and for fires in the middle, and on one side is an elevated stage (*girao*) overhead, formed of split palm-stems. The Tucúnas excel most of the other tribes in the manufacture of pottery. They make broad-mouthed jars, for Tucupí sauce, caysúma or mandioca beer, capable of holding twenty or more gallons, ornamenting them outside with crossed diagonal streaks of various colours. These jars, with cooking-pots, smaller jars for holding water, blow-pipes, quivers, matirí bags * full of small articles, baskets, skins of animals, and so forth, form the principal part of the furniture of their huts, both large and small. The dead bodies of their chiefs are interred, the knees doubled up, in large jars under the floors of their huts.

The semi-religious dances and drinking bouts usual amongst the settled tribes of Amazonian Indians are indulged in to greater excess by the Tucúnas than they are by most other tribes. The Juruparí or Demon is the only superior being they have any conception of, and his name is mixed up with all their ceremonies, but it is difficult to ascertain what they consider to be his attributes. He seems to be believed in simply as a mischievous imp, who is at the bottom of all those mishaps

* These bags are formed of remarkably neat twine made of Bromelia fibres elaborately knitted, all in one piece, with sticks; a belt of the same material, but more closely woven, being attached to the top to suspend them by. They afford good examples of the mechanical ability of these Indians. The Tucúnas also possess the art of skinning and stuffing birds, the handsome kinds of which they sell in great numbers to passing travellers.